The Anti-Democrat Diploma: How High School Education Decreases Support for the Democratic Party

John Marshall Columbia University

Abstract: *Attending high school can alter students' life trajectories by affecting labor market prospects and through exposure to ideas and networks. However, schooling's influence competes with early socialization forces and may be confounded by selection biases. Consequently, little is known about whether or how high school education shapes downstream political preferences and voting behavior. Using a generalized difference-in-differences design leveraging variation in U.S. state dropout laws across cohorts, I find that raising the school dropout age decreases Democratic partisan identification and voting later in life. Instrumental variables estimates suggest that an additional completed grade of high school decreases Democratic support by around 15 percentage points among students induced to remain in school by higher dropout ages. High school's effects principally operate by increasing income and support for conservative economic policies, especially at an individual's midlife earnings peak. In contrast, such schooling does not affect conservative attitudes on noneconomic issues or political engagement.*

Replication Materials: The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: http://doi.org/10.7910/DVN/GPRVC6.

Education is a fundamental component of U.S. economic and social policy, and it remains a salient political issue. As recently as 2010, 16% of students per cohort still failed to graduate from high school by ages 20–24 (Murnane 2013). President Obama underscored the importance of this issue in his 2012 State of the Union address, stating that "When students are not allowed to drop out, they do better. . . . I am proposing that every state . . . requires that all students stay in high school until they graduate or turn 18." Dropout ages have generally increased over the twentieth century, and many states have recently considered raising or have successfully raised their minimum leaving age to 17 or 18.[1]

While high school education undoubtedly shapes labor market prospects and social interactions, its capacity to affect voters' downstream political preferences and voting behavior is not theoretically obvious. First, schooling could exert limited influence on partisan identification and voting behavior in the face of early habitual and socialization forces beyond the classroom. A prominent literature argues that partisan identities and vote choices are highly durable over an individual's lifetime (e.g., Bartels 2010; Campbell et al. 1960). Such behaviors are believed to develop primarily at home from a young age (Jennings, Stoker, and Bowers 2009) or as a young adult (Meredith 2009; Stoker and Bass 2011).

Second, even if high school education is able to influence political preferences, it is not clear whether this predisposes voters toward the Democratic or Republican Party. On one hand, education increases downstream income (e.g., Acemoglu and Angrist 2000), which may cause voters to support lower taxation (Meltzer and

---

John Marshall is Assistant Professor of Political Science, Columbia University, 705 International Affairs Building, 420 West 118th Street, New York, NY 10027 (jm4401@columbia.edu).

I thank Jim Alt, Dan Carpenter, Charlotte Cavaille, Jon Fiva, Anthony Fowler, Andy Hall, Alex Hertel-Fernandez, Shigeo Hirano, Torben Iversen, Larry Katz, Horacio Larreguy, Rakeen Mabud, Jonathan Phillips, Jim Snyder, Harvard University workshop participants, and Bill Jacoby and three anonymous reviewers for insightful comments. I wish to thank John Bullock, Philip Oreopoulos, and Jim Snyder for kindly sharing data.

[1] In 2013, Kentucky increased the dropout age to 18 (or receiving a high school diploma). Rhode Island raised its leaving age to 18, effective in 2011. In 2012, Maryland raised its dropout age to 17 for 16-year-old students for the 2015–2016 school year, and to 18 for the 2017–2018 school year. Alaska, Delaware, Illinois, Massachusetts, Montana, South Carolina, and Wyoming have introduced similar bills since 2011.

American Journal of Political Science, Vol. 63, No. 1, January 2019, Pp. 67–83

©2018, Midwest Political Science Association

DOI: 10.1111/ajps.12409

Richard 1981). At least once the returns on schooling are realized later in life, remaining in high school could thus *decrease* Democratic support. Conversely, schooling may increase exposure to liberal values, either in the classroom (e.g., Dee 2004; Hillygus 2005; Niemi and Junn 1998) or through liberal social networks (e.g., Huckfeldt and Sprague 1995; Nie, Junn, and Stehlik-Barry 1996). The socialization induced by schooling could then instead *increase* Democratic support. Both sets of arguments suggest that schooling has the potential to transform students' life trajectories, causing them to change their policy stances and ultimately support different political parties later in life.

Existing evidence from investigating high school education's partisan effects is correlational and often conflicting. Classic studies document a positive association between greater education and voting Republican (e.g., Campbell et al. 1960; Verba, Schlozman, and Brady 1995). However, such correlations may simply reflect differences in the types of people who become educated (Kam and Palmer 2008; Sondheimer and Green 2010). Furthermore, by failing to disentangle either the direction of this relationship or its mechanisms, scholars have struggled to understand the basis of the widely documented correlations between income (which education increases) and support for conservative economic policies (e.g., Erikson and Tedin 2015; Gelman 2010), and between education and socially liberal attitudes (e.g., Dee 2004).

This article identifies how raising the school dropout age, and each additional completed grade of high school education that this imparts, affects voter policy preferences and voting behavior in later life. To estimate compulsory schooling's partisan effects, I employ a generalized difference-in-differences design leveraging cross-cohort differences in the dropout age across states (see Acemoglu and Angrist 2000; Angrist and Krueger 1991). In addition to estimating the partisan effects of raising the dropout age, I also use dropout laws to instrument for the number of grades of schooling that an individual completes. Raising the dropout age increases completed grades of schooling, without affecting post–high school education. Consequently, the instrumental variables (IV) estimates identify the effect of completing an additional grade of high school for students, disproportionately from disadvantaged backgrounds, who only remained in school due to a higher state dropout age.

Examining nationwide surveys conducted around the 2000, 2004, and 2008 presidential campaigns, I find that high school education causes voters to become significantly less liberal in later life. First, raising the dropout age has a large partisan effect in its own right: increasing the minimum school leaving age by a year induces a 1–3 percentage point shift, per birth-year cohort, against identifying as a Democratic partisan or voting for the Democratic Party. Increased Republican support is commensurate. Second, the IV estimates further indicate that an additional completed grade of high school reduces the probability that compliers—students who are disproportionately black, Hispanic, and male—will subsequently identify as a Democratic partisan and vote for a Democratic presidential candidate by around 15 percentage points.

Furthermore, my evidence suggests that high school's partisan effects on downstream political behavior operate primarily via an income-based channel. Previous studies indicate that an additional year of schooling increases wages by around 10% (Acemoglu and Angrist 2000; Angrist and Krueger 1991; Ashenfelter and Rouse 1998; Oreopoulos 2009). Consistent with education's compounded economic returns' inducing voters to support less redistribution, schooling's political effects are greatest at an individual's midlife earnings peak, and additional schooling induces voters to favor Republican economic policy positions. Although this could simply reflect voters becoming Republican partisans and adopting the party's policy positions (Lenz 2012), education does not increase support for Republican positions on noneconomic issues such as abortion, gun control, health care spending, and military spending. Furthermore, contrary to the predictions of civic education (Dee 2004; Hillygus 2005) and social network (Mendelberg, McCabe, and Thal 2017; Nie, Junn, and Stehlik-Barry 1996) socialization theories, there is little immediate effect of education and no evidence to suggest that schooling affects political engagement or socially liberal values. Together, these results suggest that by increasing an individual's subsequent income, high school education causes voters to support economic policies that ultimately reduce their propensity to identify as and vote for a Democrat.

These findings challenge the predominant perspective on the life-cycle development of political behavior. Previous studies have emphasized both the "primary principle," that what is learned first—typically from parents (e.g., Jennings, Stoker, and Bowers 2009)—is learned best (see Erikson and Tedin 2015), and that early adulthood is central to political socialization (Mendelberg, McCabe, and Thal 2017; Stoker and Bass 2011). In contrast, although there is evidence that schooling increases political participation (Sondheimer and Green 2010), adolescent civics classes and peer interactions have produced limited effect on civic and partisan attitudes (Erikson and Tedin 2015; Green et al. 2011). However, my findings show that high school education also has important consequences for partisan identification and vote choice later in life, which can overcome other influences before and after high school, and reflect downstream income opportunities rather than socialized values. Given that high school's anti-Democratic effects coincide with voters' earnings peak, and thus vary across a voter's lifetime, the results imply that partisan preferences are more responsive to changes in circumstances over a lifetime than previous studies highlighting the stickiness of political behavior suggest. My findings also suggest a catch-22 for the Democratic Party, whose support for increasing access to education comes at the cost of facilitating future Republican support.

By emphasizing high school's *partisan* effects, this article departs from the literature debating the relationship between education and political participation (e.g., Kam and Palmer 2008; Sondheimer and Green 2010). Rather, this study complements recent evidence that attending an affluent college with a norm of financial gain induces students to support conservative economic policies (Mendelberg, McCabe, and Thal 2017). I show that a similar income-oriented mechanism applies to the realization of income gains accruing to high school education, and it ultimately shapes voters to oppose taxation and vote Republican. Since high school's effects are most pronounced at a voter's earnings peak, my findings suggest that Mendelberg, McCabe, and Thal's (2017) study of students at college—before financial gains are realized—could also understate the long-term consequences of conservative college campuses.

Theoretical Perspectives

Education plays a central role in the lives of American voters. To the extent that it can overcome other early life forces, I build upon contrasting economic and sociological mechanisms to consider how schooling might affect which political party a voter chooses to support.

Education Decreases Support for Taxation?

Perhaps the most obvious effect of education is to alter an individual's earnings trajectory. Twin studies in the United States suggest that an additional year of schooling increases annual wages by 11–16% later in life (e.g., Ashenfelter and Rouse 1998), whereas studies using compulsory schooling laws to instrument for schooling estimate this rate of return to be 8–18% (Acemoglu and Angrist 2000; Angrist and Krueger 1991; Oreopoulos 2006, 2009). The human capital interpretation of this influential body of research claims that education imparts productive skills, which are rewarded by labor markets.

Linking schooling's effect on income to political behavior, Meltzer and Richard (1981) argue that individuals with higher wages will prefer lower income tax rates and less redistribution. To the extent that redistributive policy preferences influence vote choice, preferring lower income taxation entails supporting candidates advocating low tax rates. Particularly since Ronald Reagan's presidency, the Republican Party has consistently supported lower income taxation than the Democratic Party. As ideological and policy differences between the two parties have grown (McCarty, Poole, and Rosenthal 2006), differences on this issue have become easier for voters to discern. According to American National Election Surveys conducted since 2000, 71% of voters identify the Democratic Party as more liberal than the Republican Party. Moreover, since the 1980s, survey correlations have consistently shown that higher-income voters are less likely to identify with and vote for Democrats (Erikson and Tedin 2015; Gelman 2010).

Together, the human capital and Meltzer-Richard models predict that—by increasing their income—schooling makes voters more favorable toward Republican economic policies, and particularly their proposals for lower income tax rates. Differences in vote choices are thus expected to increase with realized returns to education. Given that voters can anticipate future income, redistributive preferences may also reflect expected earnings (Alesina and La Ferrara 2005).

Critics of human capital theory have instead argued that education does not itself impart skills that actually improve a worker's productivity (Spence 1973). Rather, education enables productive workers to distinguish themselves from less productive workers, for whom the costs of signaling productivity by acquiring more education are greater, when employers cannot directly observe a worker's productivity. Consequently, an increase in education should not affect wages, the national income distribution, or a voter's support for the economic policies proposed by different political parties.[2] Such a signaling model, in conjunction with the Meltzer-Richard logic, could still be consistent with a *correlation* between education and vote choices. However, there should be no empirical relationship when using research designs that identify the effects of education by abstracting from the underlying differences in productivity that might induce more productive individuals to seek greater education.

---

[2] This assumes additional education does not break the separating equilibrium.

Education Increases Exposure to Liberal Values?

From a political socialization perspective, education's effects on political behavior could be very different. Many studies show that education is correlated with socially and politically liberal attitudes, such as greater support for freedom of expression (Dee 2004), ethnic diversity (e.g., Campbell et al. 1960), and immigration (e.g., Hainmueller and Hiscox 2010). In the period examined in this article, these values have become strongly associated with the Democratic Party (McCarty, Poole, and Rosenthal 2006). Thus, while education may bestow economically valuable knowledge and skills, it could also instill liberal values that cause voters to adopt liberal political preferences.

Two main mechanisms have been proposed to explain these associations: direct effects of curricula and changes in social network composition. First, civic education and social science classes generally encourage political engagement and trust in the political system (Niemi and Junn 1998), and they seek to instill liberal values of tolerance (Dee 2004; Hillygus 2005). Such classes typically start in late high school. Furthermore, formative experiences appear to affect political beliefs decades later in life (Jennings, Stoker, and Bowers 2009; Meredith 2009). However, recent experimental evidence finds that although enhanced high school civics classes increase political knowledge, this knowledge quickly decays and does not affect support for civil liberties (Green et al. 2011). Given that other empirical evidence has emphasized the importance of college education (see Galston 2001), civic education's importance could be confined to higher education.

Second, education could more indirectly affect voters' political beliefs by altering their social network's composition, which may in turn influence their political attitudes (e.g., Huckfeldt and Sprague 1995; Lazarsfeld, Berelson, and Gaudet 1948). More-educated individuals sort into more prestigious, ethnically diverse, and politically connected networks (Nie, Junn, and Stehlik-Barry 1996), or at least become exposed to such groups. Such networks are often characterized by liberal social values and high levels of political interest, knowledge, and discussion, and might thus increase support for Democrats. At lower levels of education, individuals may enter social networks like labor unions with a clear left-wing political agenda.

While both mechanisms could induce socially liberal attitudes, observed correlations could still be spurious. Family background, values, cognitive abilities, and life experiences are correlated with both education and socially liberal attitudes (Kam and Palmer 2008). Similarly, correlated attitudes among peers could reflect homophily, rather than social influence. Excepting randomized experiments (e.g., Green et al. 2011), which have provided little evidence of durable value change, these concerns are particularly salient because extant studies have not exploited plausibly random variation in education, and they often control for variables, such as income, that are themselves consequences of education.

Empirical Design

The difficulty of identifying the partisan effects of schooling is widely recognized. As noted above, there are many confounding explanations for any correlation between educational attainment and policy preferences and voting behavior (Kam and Palmer 2008; Sondheimer and Green 2010). Beyond the omitted variable concern that has besieged the extant literature, another difficulty is interpreting potential heterogeneity in schooling's political effects. In particular, schooling's effects may depend upon the grade in question, for example, because middle school, high school, and college cover different content. As suggested above, different levels of education may differentially stimulate income-based and socialization-based mechanisms. Accordingly, a failure to separate levels of schooling would return a misleading null finding if, for example, high school's conservative effects were counterbalanced by liberal effects of attending college.

To address these concerns, I exploit cross-cohort variation across states in dropout ages—as both an important policy in their own right and as an instrument for schooling—using a difference-in-differences design. Since I show that dropout ages do not affect postsecondary education, this study offers a rare opportunity to identify the causal effects of a specific level of schooling on partisanship and voting behavior among individuals induced to remain in school by dropout laws.

State School Dropout Age Laws

State compulsory schooling laws define the minimum age at which a student must enter and may drop out of school. The first such law was adopted in Massachusetts in 1852, and 41 states had adopted similar laws by 1910, principally to meet demand for educated workers and promote assimilation (Goldin and Katz 2008). The laws have since focused on the dropout age, which gradually increased throughout the twentieth century without affecting high school graduation requirements.[3] While dropout law enforcement is relatively weak, states can and do punish habitual truancy (Oreopoulos 2009). Labor economists often use compulsory schooling laws as instruments to estimate the economic effects of schooling in the United States (e.g., Acemoglu and Angrist 2000; Angrist and Krueger 1991; Oreopoulos 2006, 2009).

---

[3] The dropout age captures the relevant legislation for the period studied here (see Section A.3.1 in the supporting information [SI]).

Figure 1 plots the minimum age at which a student could legally drop out of school across the 48 contiguous states and Washington, DC, between 1920 and 1997.[4] Unsurprisingly, there has been a general upward trend in dropout ages, particularly in the Midwest and the South. However, there are also instances of reversal, as in Maine, Mississippi, and Oregon. Given that high school dropout rates remain nontrivial—consistently registered at around 20% for all students since the 1970s, with higher rates among ethnic minorities and boys (Murnane 2013)—many states have recently sought to raise their dropout age. Between 1920 and 1997, the majority (72%) of state-years specified a dropout age of 16; 6% were below 16; 11% used 17; and 11% used 18. Since the leaving age reached 16 in all states in 1993, today's policy debate has centered on raising the leaving age to 17 or 18.

I use two indicators—$1(\textit{dropout age}_{cs} = 16)$ and $1(\textit{dropout age}_{cs} \geq 17)$—to examine the effect of these leaving ages on a given cohort, c in a given state s relative to the baseline of a dropout age below 16.[5] The former indicator primarily captures changes in dropout ages in the early and mid-twentieth century, whereas the latter captures more recent reforms that affected today's younger generations.

Identification Strategy

To identify the effects of raising the dropout age and completing an additional year of schooling on which party voters identify with and vote for later in life, I leverage state-level reforms in the dropout age using a generalized difference-in-differences design.

Reduced Form: Identifying the Effect of Increasing the State Dropout Age. To identify the political effects of state dropout laws, I compare differences in support for the Democratic Party across affected and unaffected cohorts within states that changed their dropout age with differences across the same cohorts within states that did not. This generalized difference-in-differences design separates out common trends across cohorts and time-invariant differences across states in political support from the effect of dropout laws on cohorts in states where a reform occurred. The design entails estimating regressions of the form

$$\begin{aligned} Y_{icst} = {} & \delta_1 1(\textit{dropout age}_{cs} = 16) + \delta_2 1(\textit{dropout age}_{cs} \geq 17) \\ & + \alpha_c + \theta_s + \phi_s \textit{birth year}_c + \eta_t + \varepsilon_{icst}, \end{aligned} \tag{1}$$

where Y_{icst} is an outcome (e.g., Democratic identifier/voter) from survey year t for an individual i from cohort c in state s. The difference-in-differences strategy includes fixed effects α_c for birth year (cohort) and fixed effects θ_s for the state in which a respondent grew up. Cohort fixed effects control for all differences across cohorts, including generation effects reflecting political events that may have occurred at more impressionable ages—such as early adulthood—for some cohorts (see Stoker and Bass 2011). State fixed effects capture all time-invariant state characteristics. In addition, state-specific linear cohort trends, $\phi_s \textit{birth year}_c$, allow for underlying trends in Y_{icst} across cohorts to vary by state. η_t captures common shocks electoral campaign/survey periods. Standard errors are clustered by state.

The key identifying assumption is that, absent changes in dropout laws, voters from states where a reform occurred would experience trends in Democratic support parallel to voters from states where no reform occurred. There are two main challenges to this "parallel trends" assumption.

The first is that individuals may select into particular dropout laws, by moving in response to dropout age reforms. However, among poor women of childbearing age—whose children are more likely to remain in school only because they are required to—cross-state migration is especially low and is concentrated before their children reach high school age (Molloy, Smith, and Wozniak 2011). Furthermore, the principal reasons to move across states—for college, marriage, and family reasons, and following natural disasters (Molloy, Smith, and Wozniak 2011)—are unlikely to reflect dropout age reforms. Parents willing to move to improve their child's education are also likely to persuade their child to remain in school past the dropout age anyway. Robustness checks in SI Section A.5.2 suggest that the reforms did not affect cross-state migration and that the selective migration required to nullify the results is unlikely.

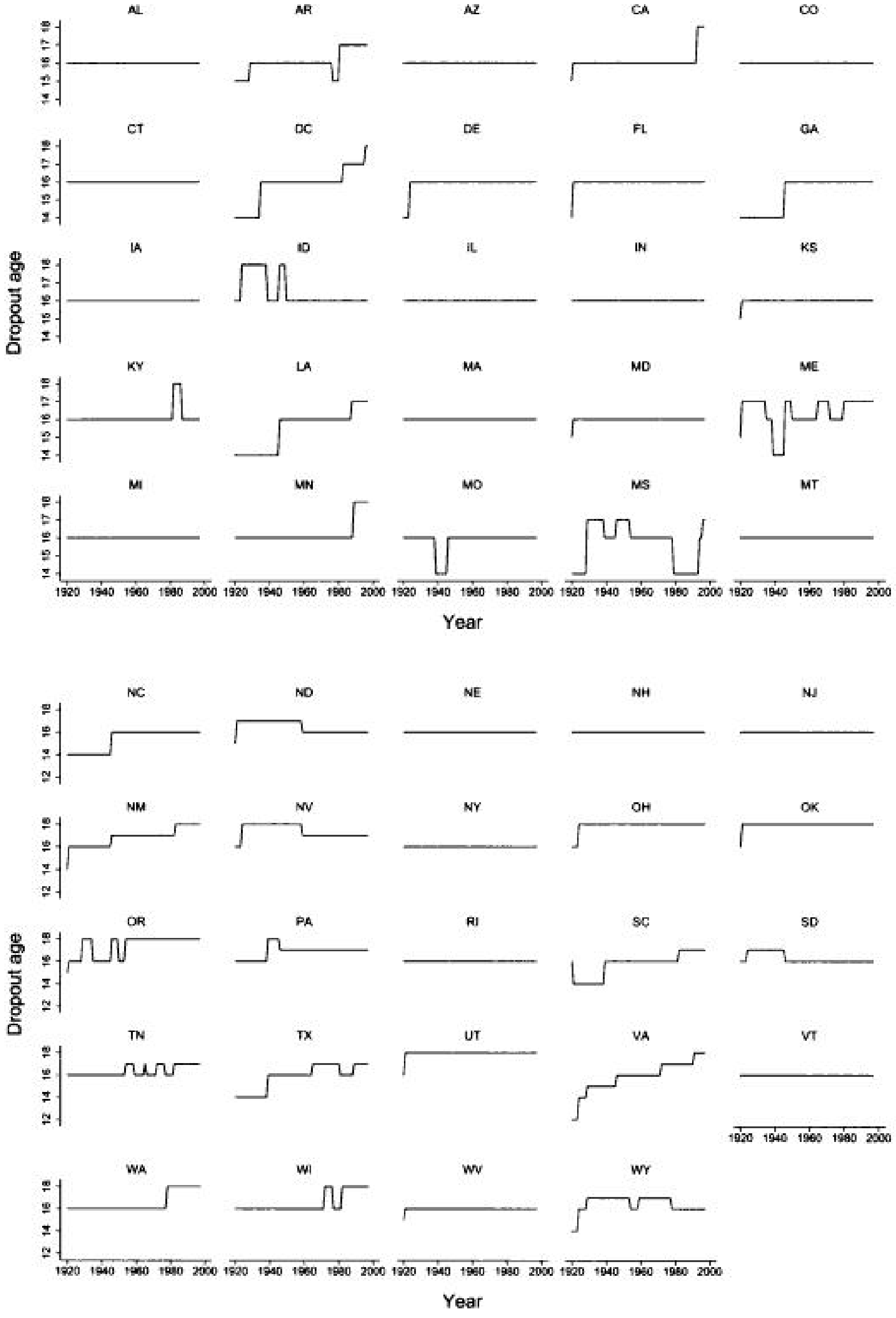
The second concern is that state dropout age reforms correlate with unobserved trends also affecting Democratic support. However, state-specific cohort trends provide a general check against the possibility that reforms coincide with linear processes that differ across states, such as changes in school quality, that could

---

[4] Alaska and Hawaii are omitted due to lack of data.

[5] I combine dropout ages of 17 and 18 because requiring students close to completing high school to remain in school until 18 has no additional effect on schooling (see SI Table A10).

FIGURE 1 U.S. State Minimum School Leaving Age Laws, 1920–97



Note: Dropout law data are from Oreopoulos (2009) and based on the National Center for Education Statistics' *Education Digest.*

also affect political behavior. Stephens and Yang (2014) demonstrate the importance of including such trends. Moreover, SI Table A3 shows that changes in dropout ages are not predicted by changes in state-level political control. SI Section A.5.1 further demonstrates the robustness of the results to incorporating lags and leads, including time-varying control variables, leveraging only within-region variation in dropout ages across state cohorts, and using a regression discontinuity design to compare the first cohorts affected by leaving age reforms to the last cohorts that were not affected.

Instrumental Variables: Identifying the Effect of Completing an Additional Grade of Schooling. To estimate the effect of completing an additional grade of schooling—as opposed to increasing the state's dropout age—on identifying as and voting for a Democrat, I use the dropout age to instrument for schooling in the following structural equation building on the difference-in-differences design described above:

$$Y_{icst} = \beta S_{icst} + \alpha_c + \theta_s + \phi_s \, birth\ year_c + \eta_t + \epsilon_{icst}, \quad (2)$$

where S_{icst} is a measure of i's schooling. I instrument for schooling using the following first stage:

$$\begin{aligned} S_{icst} = {} & \pi_1 1(dropout\ age_{cs} = 16) + \pi_2 1(dropout\ age_{cs} \geq 17) \\ & + \alpha_c + \theta_s + \phi_s \, birth\ year_c + \eta_t + \nu_{icst}. \end{aligned} \quad (3)$$

IV estimates of Equation (2) identify the local average causal response for dropout law compliers (Angrist and Imbens 1995), that is, on voters who only completed an additional grade of schooling due to a change in their state's dropout age. This causal quantity weights the local average treatment effect for each additional grade by the extent to which dropout laws contribute to the first stage for each additional grade of schooling.

In addition to the parallel trends assumption needed to estimate the effect of raising the dropout age, identification further requires a first stage, that the instruments satisfy monotonicity, and an exclusion restriction maintaining that the dropout age only affects political outcomes through increased schooling. First, the results in Table 2 below confirm that increasing the dropout age significantly increases completed grades of schooling. Second, a higher leaving age is unlikely to cause an individual to choose less schooling; SI Figure A1 supports this monotonicity assumption. Third, because additional schooling is temporally proximate to the point at which the dropout age binds, there is limited scope for changes in the dropout age to affect downstream behavior through channels other than additional education. SI Section A.5.3 finds little evidence to support possible plausible exclusion restriction violations.

Data

I primarily use data from the National Annenberg Election Survey (NAES). The NAES collates rolling surveys conducted throughout the 2000, 2004, and 2008 presidential election campaigns. More than 50,000 randomly sampled adults were interviewed by telephone during each campaign, together yielding a maximum pooled sample of 164,606 respondents aged 25 or above.[6] The sample is restricted to those aged 25 or above to ensure that most respondents have completed full-time education.[7] Beyond its large sample size, a key advantage of the NAES over other political surveys is its wide-ranging questions, which help assess the mechanisms underpinning education's political effects. I demonstrate robustness using the American National Election Survey (ANES); this is an important out-of-sample robustness check because the ANES uses different survey protocols and covers all congressional elections since 1952.

The American Communities Survey (ACS), which has mailed surveys and conducted telephone interviews with randomly sampled U.S. citizens at monthly intervals since 2000, is used to measure completed grades of schooling and estimate the first stage (see below). I use ACS microdata from the 2000, 2001, 2003, 2004, 2007, and 2008 samples (Ruggles et al. 2010) to match the years when NAES respondents were surveyed.[8]

I next briefly describe the main variables. SI Section A.1 provides detailed variable definitions and summary statistics.

Dependent Variable: Democrat Support. I examine three measures of support for the Democratic Party in the NAES. The first is an indicator for Democratic partisan self-identification. In the sample, 33% of respondents identify as Democrats, whereas 31% identify as Republicans; the residual are Independents, other partisans, or "don't know." Second, vote intention at the forthcoming presidential election is an indicator for intending to vote for the Democratic presidential candidate (Al Gore, John Kerry, or Barack Obama). Finally, I code an indicator for whether a respondent reported turning out to vote Democratic at the last presidential election (for Bill Clinton, Al Gore, or John Kerry). Democratic candidates received 41% of intended presidential votes, whereas 37%

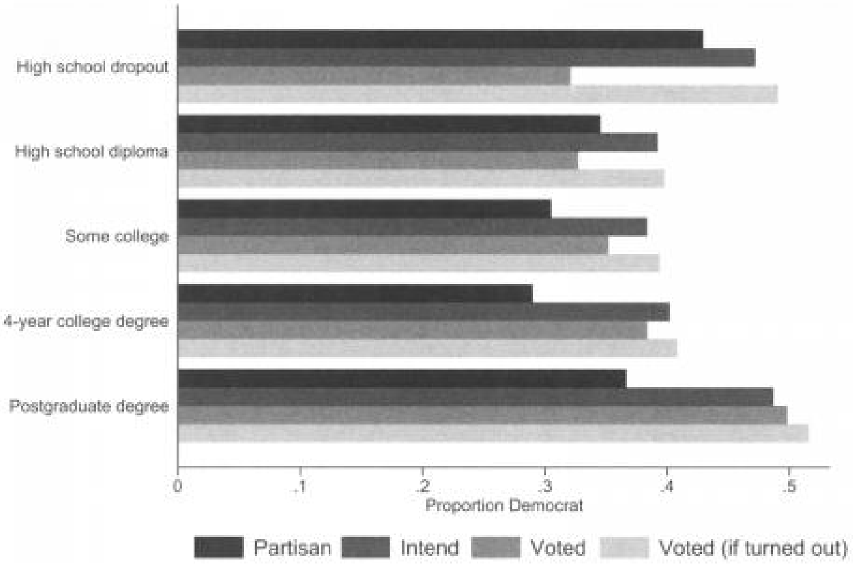
---

[6] Interviews were conducted over the following time spans: 12/1999–1/2001, 10/2003–11/2004, and 12/2007–11/2008. Online survey responses are not used here.

[7] The results are robust to restricting to 18 or to above or to 30 or to above (SI Table A15).

[8] The few NAES observations from 1999 are dropped.

FIGURE 2 Democrat Support by Education Level



of respondents reported voting for the Democratic presidential candidate at the previous election.[9] I show similar results using Republican indicators instead.

Figure 2 disaggregates Democratic support by education category, showing that support is concentrated among the least and most educated. High school dropouts are around 10 percentage points more likely to identify with and vote for the Democratic Party (once their lower turnout rates are accounted for) than those completing high school or college.

Assigning state dropout ages. Survey respondents are mapped to the dropout age in their state of residence at the age at which the law binds their cohort's decision to leave school. Birth year cohort is inferred from a respondent's age when surveyed by the NAES, and year of birth in the ACS.[10] Since state of residence as a teenager is not available, this is approximated by current state of residence in the NAES and state of birth in the ACS.

The absence of state of residence when attending high school could induce bias if compliers supporting particular political parties systematically migrate to states with different dropout ages. However, based on the ANES—which measures current state of residence *and* state of residence at age 14—there is little evidence to justify this concern. First, relatively few respondents—and especially those likely to drop out—move across states between their teenage and adult years. Specifically, 76% of ANES respondents who did not attend college reside in the state they lived in at age 14, and 88% reside in a state that had the same school leaving age. Second, SI Table A7 demonstrates that the dropout age in the state where the respondent lived at age 14 does not significantly affect whether he or she continues living in the state. Third, SI Table A8 shows that the ANES data set yields similar point estimates. Furthermore, the bounding exercise in SI Section A.5.2 demonstrates that, even under generous assumptions, substantial selective migration is required to account for the results.

Completed Grades of Schooling. The IV estimates require a measure of the number of grades of completed schooling. The NAES only measures *completing* high school, and it does not distinguish between finer levels of partial high school completion that different dropout ages could affect. While previous studies have used an indicator for completing high school, Marshall (2016) demonstrates that this is likely to significantly upwardly bias IV estimates. Intuitively, this is because coarsening years of schooling into a dichotomous variable for completing high school causes the first stage to only capture the effect of the instrument on completing high school, neglecting any increases in schooling induced by raising the dropout age that did not entail completing high school. Consequently, the exclusion restriction is violated if any other level of schooling induced by changes in the dropout age affects identifying as or voting for a Democrat.

---

[9] Weighting by each NAES sample size, the ultimate Democratic presidential vote share corresponding to the intended vote measure is 50%, and 27% for actual votes at the previous election.

[10] This approach yields first stage results similar to studies using month of birth (Acemoglu and Angrist 2000).

However, an interval measure of schooling, such as the number of completed grades of schooling, allows for consistent estimation of the local average causal response, provided—as in this case—that multiple grades are affected by the instrument (Marshall 2016). Since the number of grades is not measured in the NAES (or ANES), I combine the NAES and ACS samples using two-sample IV methods. The ACS's fine-grained education variable measures the number of completed grades of schooling. To avoid complications with coding different types of post–high school education, the variable is top-coded at completing 12th grade, and thus ranges from 0 to 12 grades. Table 2 below shows that dropout ages do not affect schooling beyond 12th grade.

Two-Sample IV Estimation

For the IV estimates, I use two-sample, two-stage least squares (TS2SLS) to estimate Equation (2). Because the IV estimator is approximately the reduced form estimate divided by the first stage estimate (e.g., Angrist and Krueger 1992), TS2SLS separately estimates these components using different samples before combining them as a consistent two-step estimator of the effect of an additional completed grade of schooling (Inoue and Solon 2010). This entails estimating the reduced form—Equation (1)—in the NAES data set and the first stage—Equation (3)—in the ACS data set. Intuitively, the first stage estimates from the ACS proxy for what the NAES first stage would have been had schooling been measured in the NAES. I demonstrate the consistency of the TS2SLS estimator and derive its cluster-robust covariance matrix in SI Section A.4.2. The reduced form estimates use only the NAES data.

Beyond the standard IV assumptions discussed above, TS2SLS requires that the reduced form and first stage data sets independently sample from the same population (Inoue and Solon 2010). This ensures that key sample moments—variable means, variances, and cross-products—are identical in expectation, and are thus "exchangeable." Exchangeability implies that the same first stage would have been estimated in the NAES data set had completed grades of schooling been measured.

This assumption is plausible in this context. Both the ACS and NAES randomly sample voting-age citizens, once ineligible voters from the NAES sample and those aged below 25 and born outside the United States are removed from the ACS sample. To address potential differences in response rates, I ensure that the ACS sample moments match the distribution of NAES respondents by randomly sampling ACS observations stratified by state cohort, survey year, gender, and race in proportion with the NAES distribution of these predetermined covariates. Details of this procedure, which yielded a sample of 380,685 observations, are provided in SI Section A.4.3.[11] The summary statistics in SI Table A1 demonstrate that this approach almost exactly replicates the first two moments for each variable.

Downstream Partisan Effects of Dropout Ages and Schooling

I now present the main findings that higher dropout ages and an additional grade of high school substantially decrease the probability that an individual identifies with, or votes for, Democrats later in life.

Reduced Form Estimates

I first estimate the effect of raising the school dropout age. Columns 1–3 in Panel A of Table 1 report the reduced form generalized difference-in-differences estimates, where a negative coefficient indicates a decrease in support for the Democratic Party. Columns 4–6 report analogous estimates for Republican Party support.

The results reveal that raising the dropout age decreases a voter's propensity to identify as or vote for a Democrat. The first coefficient in each column indicates that, compared to cohorts in states requiring students to remain in school until at most age 15, raising the dropout age to 16 decreases the proportion of Democratic partisans by 1.8 percentage points, those intending to vote for Democrats by 3.1 percentage points, and those actually voting for Democrats by 1.4 percentage points. Although only the decline in vote intention is statistically significant at the 95% level, these estimates imply around a 5% reduction in Democratic support relative to their sample means.

To examine the more topical effect of further increasing the dropout age to 17 or above, the first coefficient in each column can be subtracted from the second. These comparisons at the foot of Table 1 show that, relative to

---

[11] SI Figures A3 and A4 show that the particular random sample drawn for estimating the first stage is not an outlier.

TABLE 1 The Effect of School Dropout Ages on Identifying as and Voting Democrat and Republican

	Democratic Support			Republican Support		
	Partisan (1)	Intend (2)	Voted (3)	Partisan (4)	Intend (5)	Voted (6)
Dropout age = 16	−0.017	-0.031^{*}	−0.014	0.011	0.039^{*}	0.028
	(0.016)	(0.015)	(0.013)	(0.014)	(0.014)	(0.017)
Dropout age ≥ 17	−0.032	-0.044^{*}	-0.033^{*}	0.030	0.054^{*}	0.040^{*}
	(0.018)	(0.017)	(0.014)	(0.019)	(0.016)	(0.018)
Observations	164,606	134,504	117,733	164,606	134,504	117,733
Outcome range	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}
Outcome mean	0.33	0.41	0.37	0.31	0.46	0.47
Difference: Dropout age ≥ 17	-0.015^{*}	-0.013^{*}	-0.019^{*}	0.018^{*}	0.014	0.012
– Dropout age = 16	(0.006)	(0.005)	(0.007)	(0.008)	(0.007)	(0.006)

Note: Outcome variables are indicators for identifying as a Democrat/Republican partisan ("partisan"), intending to vote Democratic/Republican for president ("intend"), and voting Democrat/Republican in the previous presidential election ("voted"). All specifications include state in which the respondent grew up, cohort, and survey year fixed effects and state-specific cohort trends, and they are estimated using OLS. Differences in the number of observations reflect differences in the NAES modules in which each outcome was included. The omitted dropout age category is dropout age ≤ 15. Standard errors clustered by state are in parentheses. $^{*}p < .05$.

cohorts in states requiring students to remain in school until age 16, further raising the dropout age to 17 or higher decreased the proportion of Democratic partisans by 1.5 percentage points, those intending to vote for Democrats by 1.3 percentage points, and those who reported actually voting for Democrats by 1.9 percentage points. Each difference is statistically significant at the 95% level. These results imply reductions in Democratic support of around 4% per cohort. The slightly larger effect at 16 likely reflects the comparison with the omitted category containing respondents primarily facing a dropout age of 14. The regression discontinuity estimates in SI Table A6 report slightly larger effects among those first affected by the reforms.

Columns 4–6 show commensurate increases in Republican support. This suggests that increasing the dropout age caused as many would-be Democratic supporters to become Republican supporters. Unfortunately, it is not possible to distinguish whether individuals ceasing to be Democrats become Republicans, or whether Democrats become Independents and Independents become Republicans.

Instrumental Variables Estimates

The IV results in Table 2 estimate the effect of completing an additional grade of schooling. In contrast with the reduced form estimates, which aggregate across state cohorts, these estimates apply only to individuals induced to remain in school because of an increase in the dropout age affecting their state cohort.

The first stage estimates from the ACS sample in column 1 show that raising the dropout age significantly increases schooling. Relative to state cohorts facing a dropout age below 16, raising the leaving age to 16 increases the average number of completed grades of schooling by 0.18. Further raising the dropout age to at least 17 keeps students in school for an additional 0.04 grades ($p = .11$). These estimates are similar in magnitude to previous estimates pertaining to cohorts born earlier in the twentieth century (Acemoglu and Angrist 2000; Oreopoulos 2006; Stephens and Yang 2014). The F statistic at the foot of column 1 indicates that the instruments are relatively strong.

While column 1 demonstrated that raising the dropout age increases completed grades of schooling, it could also affect postsecondary education. However, column 2 shows that, on average, increasing the dropout age does not increase the probability that an individual completes schooling beyond 12th grade.[12] This implies that the estimates in this article only apply to completing additional grades of precollege schooling and thus abstract from any potentially countervailing effects of attending college.

Reinforcing the reduced form findings, the TS2SLS estimates suggest that schooling has a large anti-Democratic effect among those induced to remain in high school by a higher dropout age. Columns 3–5 indicate that an additional grade of high school decreases the probability of identifying as a Democrat by 14 percentage

---

[12] Acemoglu and Angrist (2000) also find that college attendance was unaffected.

TABLE 2 The Effect of an Additional Completed Grade of High School on Identifying as and Voting Democrat

	Completed Grades OLS (1)	Beyond 12th Grade OLS (2)	Democratic Support		
			Partisan TS2SLS (3)	Intend TS2SLS (4)	Voted TS2SLS (5)
Dropout age = 16	0.175*	−0.018			
	(0.044)	(0.014)			
Dropout age ≥ 17	0.214*	−0.010			
	(0.048)	(0.015)			
Completed grades			−0.143	−0.195*	−0.148
			(0.096)	(0.091)	(0.080)
First stage (ACS) observations	380,685	380,685	380,685	374,306	380,685
Reduced form (NAES) observations			164,606	134,461	117,733
Outcome range	[0, 12]	{0, 1}	{0, 1}	{0, 1}	{0, 1}
Outcome mean	11.64	0.52	0.33	0.41	0.37
First stage F statistic	10.1	2.6	10.1	9.9	10.1
Difference: Dropout age ≥ 17	0.038	0.008			
– Dropout age = 16	(0.024)	(0.004)			

Note: All specifications include state in which the respondent grew up, cohort, and survey year fixed effects and state-specific cohort trends. The specifications in columns 1 and 2 are estimated using OLS, and the specifications in columns 3–5 are estimated using TS2SLS. Differences in the number of reduced form observations reflect differences in the NAES modules in which each outcome was included. First stage and reduced form observations decline in column 4 because the ACS sample is reduced to match the NAES survey years in which vote intention was elicited; first stage estimates are reported in SI Section A.6.5 The omitted dropout age category is dropout age ≤ 15. Standard errors clustered by state are in parentheses. $^*p < .05$.

points and intended and reported voting for the Democratic presidential candidate by 15–20 percentage points. The decrease in Democratic vote intention is statistically significant at the 95% level, with partisanship ($p = .14$) and reported voting ($p = .07$) falling just outside this standard. Combined with the reduced form results, these findings indicate that high school education has important downstream effects on voters among compliers with low education levels.

Possible Mechanisms

Having shown that dropout laws inducing students to remain in high school decrease support for the Democratic Party, I next use the same generalized difference-in-differences and IV methods to explore whether the dropout age and additional completed grades of schooling affect the mechanisms underpinning the income- and socialization-based theories considered above. The results most strongly support the Meltzer-Richard model, suggesting that—by increasing income—schooling induces conservative economic policy preferences, which in turn decrease the likelihood that voters support Democrats.

Evidence Supporting an Income Channel

Beyond the well-established finding that an additional year of schooling induced by higher dropout ages increases wages at peak working age by around 10% (Acemoglu and Angrist 2000; Angrist and Krueger 1991; Oreopoulos 2006, 2009), I provide three further pieces of evidence consistent with the income-based Meltzer-Richard channel.

First, if education is driving lower support for Democrats by increasing an individual's income, then this effect should be most pronounced when the greatest return on education is realized—at an individual's earnings peak. I test this implication by comparing the effects of the dropout age on the 44% of respondents aged 45–65 at the date of the survey to all other respondents.[13] The ACS sample shows that wages are highest between these ages. The results in Panel A of Table 3 demonstrate that at an individual's earnings peak, the negative effects of raising both dropout age levels on identifying as and voting for a Democrat are significantly greater. This suggests that realizing the returns on education may be a key component of schooling's political effect, although the estimates

---

[13] Income is posttreatment, so it cannot be used directly.

TABLE 3 Heterogeneous Effects of Dropout Ages on Republican Support by Earnings Peak

	Democratic Support		
	Partisan (1)	Intend (2)	Voted (3)
Panel A: Baseline estimates			
Dropout age =16	−0.016	−0.031*	−0.011
	(0.016)	(0.014)	(0.011)
Dropout age = 16 × Earnings peak	−0.114*	−0.066*	−0.193*
	(0.016)	(0.016)	(0.013)
Dropout age ≥17	−0.032	−0.042*	−0.029*
	(0.017)	(0.016)	(0.012)
Dropout age ≥ 17 × Earnings peak	−0.110*	−0.068*	−0.194*
	(0.015)	(0.016)	(0.014)
Observations	164,606	134,504	117,733
Earnings peak mean	0.44	0.44	0.46
Panel B: Including earnings peak interactive controls			
Dropout age = 16	−0.008	−0.015	−0.007
	(0.018)	(0.017)	(0.014)
Dropout age =16 × Earnings peak	−0.125*	−0.110*	−0.231*
	(0.022)	(0.025)	(0.017)
Dropout age ≥ 17	−0.016	−0.016	−0.006
	(0.019)	(0.018)	(0.017)
Dropout age ≥ 17 × Earnings peak	−0.148*	−0.144*	−0.263*
	(0.023)	(0.028)	(0.021)
Observations	164,606	134,504	117,733
Earnings peak mean	0.44	0.44	0.46

Note: All specifications include state in which the respondent grew up, cohort, and they survey year fixed effects and state-specific cohort trends, and are estimated using OLS. Differences in the number of observations reflect differences in the NAES modules in which each outcome was included. Earnings peak is an indicator for respondents aged between 45 and 65; the lower-order term is omitted. The specifications in Panel B interact all covariates with the earnings peak indicator. The omitted dropout age category is dropout age ≤ 15. Standard errors clustered by state are in parentheses. $^*p < .05$.

still indicate smaller effects outside the peak earnings period. Panel B shows similar results when simultaneously controlling for the interaction of the earnings peak indicator with all other covariates. These findings imply that even though voter policy preferences are fairly sticky from early adulthood (Erikson and Tedin 2015; Stoker and Bass 2011), they can nevertheless respond to changes over a voter's life cycle that correspond with his or her economic incentives.

Second, I use survey attitudes to examine whether additional grades of schooling increase opposition to taxation—the key driver of the Meltzer-Richard model. The IV estimate in column 1 of Table 4 shows that educated respondents regard themselves as significantly more conservative when asked to place themselves on a (standardized) 5-point liberal-to-conservative scale.[14] An additional grade of high school equates to a 0.29 standard deviation increase in conservative preferences. To better capture *economic* policy preferences, column 2 shows that an additional grade of high school increases the belief that taxes should be reduced by 18 percentage points. This belief strongly correlates with identifying with or voting for the Republican Party[15] and is thus consistent with the argument that high school causes voters to become more fiscally conservative and ultimately reject Democrats.

Third, if voters adopt the policy positions of the political party or candidate they identify with (e.g., Lenz 2012), changes in economic policy preferences could instead reflect changes in partisanship. If voters reflect their party's

---

[14] SI Table A13 reports similar reduced form estimates.

[15] Although this link from potential mediator to outcome cannot be well identified, specifications akin to Equation (1) suggestively show that voters believing that taxes should be reduced are more than 10 percentage points more likely to be Republican partisans or voters for Republican presidential candidates.

TABLE 4 The Effect of an Additional Completed Grade of High School on Potential Income and Socialization Mechanisms

	Conservative Scale (1)	Reduce Taxes (2)	Ban Abortion (3)	Low Gun Controls (4)	Low Health Spending (5)	High Military Spending (6)	Republican Non-Economic Issues (7)
Completed grades	0.293*	0.175*	−0.079	−0.040	0.131	−0.078	−0.168
	(0.132)	(0.087)	(0.078)	(0.049)	(0.107)	(0.126)	(0.147)
Reduced form (NAES) observations	160,593	127,479	123,350	74,368	63,134	71,693	152,068
First stage (ACS) observations	380,685	378,454	378,454	265,041	265,041	265,041	378,454
Outcome range	[−2.17, 1.75]	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	[−1.17, 2.45]
Outcome mean	−0.00	0.36	0.20	0.38	0.31	0.49	0.00
First stage F statistic	10.2	9.8	9.8	11.9	11.9	11.9	9.8

	Political Knowledge Scale (8)	Political Interest Scale (9)	Discuss Politics (10)	Turnout (Pres. Election) (11)	Trust Federal Govt. (12)	Protect Enviro. More (13)
Completed grades	−0.123	−0.158	−0.256	0.036	−0.009	−0.078
	(0.156)	(0.146)	(0.133)	(0.036)	(0.088)	(0.043)
Reduced form observations	116,233	165,370	157,454	140,316	50,440	116,050
First stage (ACS) observations	356,058	380,685	380,685	378,454	376,537	267,272
Outcome range	[−1.21, 1.33]	[−2.27, 2.30]	[−1.19, 1.53]	{0, 1}	{0, 1}	{0, 1}
Outcome mean	−0.00	0.00	−0.00	0.86	0.25	0.13
First stage F statistic	9.6	10.2	10.2	9.8	10.5	12.8

Note: All nonbinary outcome variables are standardized; see SI Section A.1 for detailed variable definitions. All specifications include state in which the respondent grew up, cohort, and survey year fixed effects and state-specific cohort trends, and they are estimated using TS2SLS. Differences in the number of reduced form observations reflect differences in the NAES modules in which each outcome was included. Differences in the number of first stage observations reflect adjustments to the ACS sample to account for survey years, cohorts, and states where the NAES survey outcome was not elicited; first stage estimates are reported in SI Table A.14. Standard errors clustered by state are in parentheses. *$p < .05$.

positions, they should also shift toward prominent Republican stances on other issues. However, columns 3–6 of Table 4 provide no evidence of such changes: An additional completed grade of schooling does not significantly increase the likelihood that respondents oppose abortion, gun control, health spending, or cutting military spending.[16] The effects of schooling on these issues are smaller in magnitude than schooling's effect on economic policy preferences, whereas the coefficients for military spending, gun control, and banning abortion point in the opposite direction to what the correlation with Republican support would suggest. Combined as a scale, column 7 shows that schooling does not shift respondents toward Republican positions on these noneconomic policy issues. These results align with Gerber, Huber, and Washington (2010), who find that experimentally inducing a shift in the party that a voter identifies with does not affect his or her policy positions. The results also challenge explanations in which voters adopt the views of generally Republican social networks that education may induce them to enter. Together, these tests suggest that economic policy preferences drive the political choices of those receiving more high school education.

Little Evidence of Political Socialization

In contrast, the socialization theories reviewed above argue that schooling cultivates political engagement and induces voters to adopt socially liberal values. Although such changes are typically associated with *supporting Democrats*, it remains possible that socialization mechanisms operate alongside income channels or instead drive Republican support. However, in addition to the earnings peak results suggesting that education's effects do not principally reflect immediate classroom socialization, I find no evidence that schooling activates the basic mechanisms underpinning these theories on average.

---

[16] These positions are highly correlated with identifying as and voting Republican in the NAES.

The civic education and social network channels emphasize the importance of changes in political engagement and political attitudes. However, consistent with existing research (Galston 2001), columns 8 and 9 of Table 4 show that an additional completed grade of schooling does not significantly affect—and, if anything, reduces—multi-item scales of political knowledge or political interest. Furthermore, columns 10–12 report no effect on discussion of politics with friends or family, self-reported turnout in the last presidential election, or trust in the federal government. These findings suggest that the average voters induced to remain in high school by higher dropout ages are neither induced to engage and participate in politics more[17] nor less likely to trust government institutions that required that they remain in high school longer.

Moreover, policy and issue preferences do not change as socialization explanations predict. As noted above, there is no evidence to suggest that greater schooling is associated with socially liberal positions on gun control or abortion. Column 13 further shows that completing an additional grade of high school does not significantly increase support for environmental protection. In combination with reduced support for Democrats, there is thus little evidence to suggest that voters become more socially liberal.

Discussion of Implications

The preceding analysis demonstrates that the additional high school education induced by raising the school leaving age significantly decreases voters' downstream probability of voting for Democrats. To investigate the broader implications of this finding, I first consider which types of voters change their preferences and behavior. SI Table A11 examines differences in the first stage estimates by subgroup, showing that male and especially black or Hispanic students—who register the lowest propensities to complete high school—have been affected most by the reforms.

The large effects observed among these compliers are important to recognize, from both an academic and policy perspective, not least because disadvantaged minorities represent relatively large and—as their population share grows—increasingly important electoral groups in their own right. Although support for Democrats remains high, particularly among African Americans, it does not appear to be impregnable in the face of income-based incentives—at least in the twenty-first century-context of weak labor movements (when the NAES surveys were conducted). This may be especially true among Hispanic voters and white working-class men, whose support for Democrats has become more marginal. Moreover, levers to affect high school remain important because nearly 20% of students still fail to graduate from high school (Murnane 2013).

Nevertheless, do the local effects identified here generalize to other subpopulations? Beyond being the most affected, compliers from disadvantaged backgrounds could also be the most likely to benefit from the reforms. Conversely, since education raises the income of all types of workers, students from more advantaged backgrounds may respond similarly (e.g., Mendelberg, McCabe, and Thal 2017). Providing some support for the latter perspective, the IV estimates in SI Table A12 suggest that black or Hispanic and male compliers are no more likely to cease supporting Democrats, once induced to remain in school. This suggests that the effects may generalize to other types of students who could also be encouraged to remain in school by states that have yet to raise their leaving age to 17 or 18. It is harder to generalize to students who would always complete high school. However, the income-based mechanisms driving the effects could plausibly apply to all types of voters, whereas my estimates suggest that the effects of 1 or 2 years of schooling broadly align with the descriptive comparisons documented in Figure 2 for the entire sample.

Another approach to assessing the political importance of raising the dropout age is its downstream electoral consequences. Once the number of affected cohorts accumulates to reach a critical mass, the voting behavior induced by the reforms could change state-level electoral outcomes. SI Table A16 provides initial evidence of such changes, showing that raising the dropout age to 16 reduced the Democratic seat share in state houses and senates 45 years after the policy was enacted—the point when Democratic support is weakest among the first cohorts to be affected by the reform—by around 4 percentage points. These estimates are tentative because it is difficult to operationalize lag times between cause and effect, which also reduce the set of reforms that can be analyzed. Still, the estimates highlight the potential implications of schooling reforms for electoral outcomes, and they suggest that future research could extend this analysis to examine potential increases in fiscally conservative policy outcomes. Noneconomic policies could also change if Republicans elected for their fiscally conservative positions also pursue other policy changes.

---

[17] Sondheimer and Green's (2010) positive findings on turnout may reflect pre–high school extracurricular education or differences in educational quality particular to their experiments.

In the context of recent efforts—particularly from Democrats—to increase dropout ages, my findings also suggest a catch-22 for a long-sighted Democratic Party. On one hand, increasing access to education is often a plank of the party's state-level policy agendas, whereas a broader goal of the party is to increase opportunities for disadvantaged minorities. In the short term, the party may be rewarded electorally for acting on such objectives (e.g., Levitt and Snyder 1997). On the other hand, increasing access to education comes at the long-run cost of the beneficiaries voting Republican in the future. Similarly, the results suggest that Republican opposition to raising dropout ages (e.g., in South Carolina in early 2016) may neglect its potential long-run strategic benefits. In this respect, this phenomenon resembles other prescient temporal political trade-offs in U.S. politics, such as reducing taxes in the short term while retaining a longer-term reputation for fiscal prudence (e.g., for Republicans working with President Trump) or the flexibility to raise spending (e.g., for Democrats following President George W. Bush's income tax cuts), or selecting extremist primary candidates who appeal to a party's base but not the general electorate. Although this article's focus is not the political economy of reform, these considerations suggest interesting avenues for future research.

Conclusion

Despite education's key role in determining students' life trajectories, this is the first study to identify whether and how high school education affects downstream political preferences and voting behavior. My findings give schooling a clear partisan tint by showing that it causes voters to become more conservative on redistributive issues and ultimately vote Republican. The results contrast with previous studies highlighting the stickiness of partisan preferences: I find that raising the minimum dropout age by a year decreases Democratic partisan identification and voting by 1–3 percentage points per cohort, whereas completing an additional grade of schooling decreases the probability that a voter identifies with or votes for the Democratic Party later in life by around 15 percentage points. These magnitudes suggest that dropout laws may have meaningfully altered electoral and policy outcomes, particularly at the state level.

Both income and socialization theories could explain high school education's conservative effects. However, an explanation combining human capital theory with the Meltzer-Richard model of income-based policy preferences receives greater empirical support. I show that additional high school education causes voters to support low tax rates, without adopting Republican positions on noneconomic issues. Furthermore, the largest effects of education are registered around voters' midlife earnings peak. Conversely, there is no systematic evidence suggesting that additional schooling affects political engagement or socially liberal values.

Because state dropout ages do not significantly increase postsecondary education, this article's estimates speak to high school education. Another question is then whether the anti-Democratic effects of high school—which may reflect a broader class of catch-22 policies generating intertemporal economic and political trade-offs for progressive parties—extend to college education. On one hand, college education could more effectively instill socially liberal values, whether through curricula or social networks, than high school. On the other hand, Mendelberg, McCabe, and Thal (2017)—who focus on student attitudes, rather than downstream voting behavior—suggest that colleges with a culture of financial gain could reinforce the income incentives suggested above by cultivating aspirations for financial gain. Moreover, any socialization effects might dissipate after leaving college. Systematic evidence separating these mechanisms represents an important avenue for future research.

References

Acemoglu, Daron, and Joshua D. Angrist. 2000. "How Large Are Human Capital Externalities? Evidence from Compulsory Schooling Laws." *NBER Macroeconomics Annual* 15: 9–59.

Alesina, Alberto, and Eliana La Ferrara. 2005. "Preferences for Redistribution in the Land of Opportunities." *Journal of Public Economics* 89(5): 897–931.

Angrist, Joshua D., and Alan B. Krueger. 1991. "Does Compulsory School Attendance Affect Schooling and Earnings?" *Quarterly Journal of Economics* 106(4): 979–1014.

Angrist, Joshua D., and Guido W. Imbens. 1995. "Two-Stage Least Squares Estimation of Average Causal Effects in Models with Variable Treatment Intensity." *Journal of the American Statistical Association* 90(430): 431–42.

Angrist, Joshua D., and Alan B. Krueger. 1992. "The Effect of Age at School Entry on Educational Attainment: An Application of Instrumental Variables with Moments from Two Samples." *Journal of the American Statistical Association* 87(418): 328–36.

Ashenfelter, Orley, and Cecilia Rouse. 1998. "Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins." *Quarterly Journal of Economics* 113(1): 253–84.

Bartels, Larry M. 2010. "The Study of Electoral Behavior." In *The Oxford Handbook of American Elections and Political Behavior*, ed. Jan E. Leighley. New York: Oxford University Press. 239–61.

Campbell, Angus, Philip E. Converse, Warren E. Miller, and Donald E. Stokes. 1960. *The American Voter*. New York: Wiley.

Dee, Thomas S. 2004. "Are There Civic Returns to Education?" *Journal of Public Economics* 88(9): 1697–1720.

Erikson, Robert S., and Kent L. Tedin. 2015. *American Public Opinion*. 9th ed. New York: Pearson.

Franklin, Charles H. 1989. "Estimation across Data Sets: Two-Stage Auxiliary Instrumental Variables Estimation (2SAIV)." *Political Analysis* 1(1): 1–23.

Galston, William A. 2001. "Political Knowledge, Political Engagement, and Civic Education." *Annual Review of Political Science* 4(1): 217–34.

Gelman, Andrew. 2010. *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do*. Princeton, NJ: Princeton University Press.

Gerber, Alan S., Gregory A. Huber, and Ebonya Washington. 2010. "Affiliation, Partisanship, and Political Beliefs: A Field Experiment." *American Political Science Review* 104(4): 720–44.

Goldin, Claudia D., and Lawrence F. Katz. 2008. *The Race between Education and Technology*. Cambridge, MA: Harvard University Press.

Green, Donald P., Peter M. Aronow, Daniel E. Bergan, Pamela Greene, Celia Paris, and Beth I. Weinberger. 2011. "Does Knowledge of Constitutional Principles Increase Support for Civil Liberties? Results from a Randomized Field Experiment." *Journal of Politics* 73(2): 463–76.

Hainmueller, Jens, and Michael J. Hiscox. 2010. "Attitudes toward Highly Skilled and Low-Skilled Immigration: Evidence from a Survey Experiment." *American Political Science Review* 104(1): 61–84.

Hillygus, D. Sunshine. 2005. "The Missing Link: Exploring the Relationship between Higher Education and Political Engagement." *Political Behavior* 27(1): 25–47.

Huckfeldt, R. Robert, and John Sprague. 1995. *Citizens, Politics and Social Communication: Information and Influence in an Election Campaign*. New York: Cambridge University Press.

Inoue, Atsushi, and Gary Solon. 2010. "Two-Sample Instrumental Variables Estimators." *Review of Economics and Statistics* 92(3): 557–61.

Jennings, M. Kent, Laura Stoker, and Jake Bowers. 2009. "Politics across Generations: Family Transmission Reexamined." *Journal of Politics* 71(3): 782–99.

Kam, Cindy D., and Carl L. Palmer. 2008. "Reconsidering the Effects of Education on Political Participation." *Journal of Politics* 70(3): 612–31.

Lazarsfeld, Paul F., Bernard Berelson, and Hazel Gaudet. 1948. *The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign*. New York: Columbia University Press.

Lenz, Gabriel S. 2012. *Follow the Leader? How Voters Respond to Politicians' Policies and Performance*. Chicago: University of Chicago Press.

Levitt, Steven D., and James M. Snyder Jr. 1997. "The Impact of Federal Spending on House Election Outcomes." *Journal of Political Economy* 105(1): 30–53.

Marshall, John. 2016. "Coarsening Bias: How Instrumenting for Coarsened Treatments Upwardly Biases Instrumental Variable Estimates." *Political Analysis* 24(2): 157–71.

McCarty, Nolan, Keith T. Poole, and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge, MA: MIT Press.

Meltzer, Allan H., and Scott F. Richard. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy* 89(5): 914–27.

Mendelberg, Tali, Katherine T. McCabe, and Adam Thal. 2017. "College Socialization and the Economic Views of Affluent Americans." *American Journal of Political Science* 61(3): 606–23.

Meredith, Marc. 2009. "Persistence in Political Participation." *Quarterly Journal of Political Science* 4(3): 187–209.

Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2011. "Internal Migration in the United States." *Journal of Economic Perspectives* 25(3): 173–96.

Murnane, Richard J. 2013. "U.S. High School Graduation Rates: Patterns and Explanations." *Journal of Economic Literature* 51(2): 370–422.

Murphy, Kevin M., and Robert H. Topel. 1985. "Estimation and Inference in Two-Step Econometric Models." *Journal of Business and Economic Statistics* 20(1): 88–97.

Nie, Norman H., Jane Junn, and Kenneth Stehlik-Barry. 1996. *Education and Democratic Citizenship in America*. Chicago: University of Chicago Press.

Niemi, Richard G., and Jane Junn. 1998. *Civic Education: What Makes Students Learn*. New Haven: Yale University Press.

Oreopoulos, Philip. 2006. "Estimating Average and Local Average Treatment Effects of Education When Compulsory Schooling Laws Really Matter." *American Economic Review* 96(1): 152–75.

Oreopoulos, Philip. 2009. "Would More Compulsory Schooling Help Disadvantaged Youth? Evidence from Recent Changes to School-Leaving Laws." In *The Problems of Disadvantaged Youth: An Economic Perspective*, ed. Jonathan Gruber. Chicago: University of Chicago Press, 85–112.

Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. 2010. "Integrated Public Use Microdata Series: Version 5.0." University of Minnesota, Minneapolis.

Sondheimer, Rachel M., and Donald P. Green. 2010. "Using Experiments to Estimate the Effects of Education on Voter Turnout." *American Journal of Political Science* 41(1): 178–89.

Spence, Michael. 1973. "Job Market Signaling." *Quarterly Journal of Economics* 87(3): 355–74.

Stephens, Melvin, Jr., and Dou-Yan Yang. 2014. "Compulsory Education and the Benefits of Schooling." *American Economic Review* 104(6): 1777–92.

Stoker, Laura, and Jackie Bass. 2011. "Political Socialization: Ongoing Questions and New Directions." In *The Oxford Handbook of American Public Opinion and the Media*, ed. George C. Edwards III, Lawrence R. Jacobs, and Robert Y. Shapiro. New York: Oxford University Press, 453–65.

Verba, Sidney, Kay Lehman Schlozman, and Henry E. Brady. 1995. *Voice and Equality: Civic Voluntarism in American Politics*. Cambridge: Harvard University Press.

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

A.1: Detailed variable definitions
A.2: ANES data for robustness checks
A.3: Additional information about state schooling laws
A.4: Technical details for IV estimation
A.5: Robustness to potential violations of the identifying assumptions
A.6: Additional tests referenced in the main article
A.7: Implications of raising the dropout age for downstream electoral outcomes